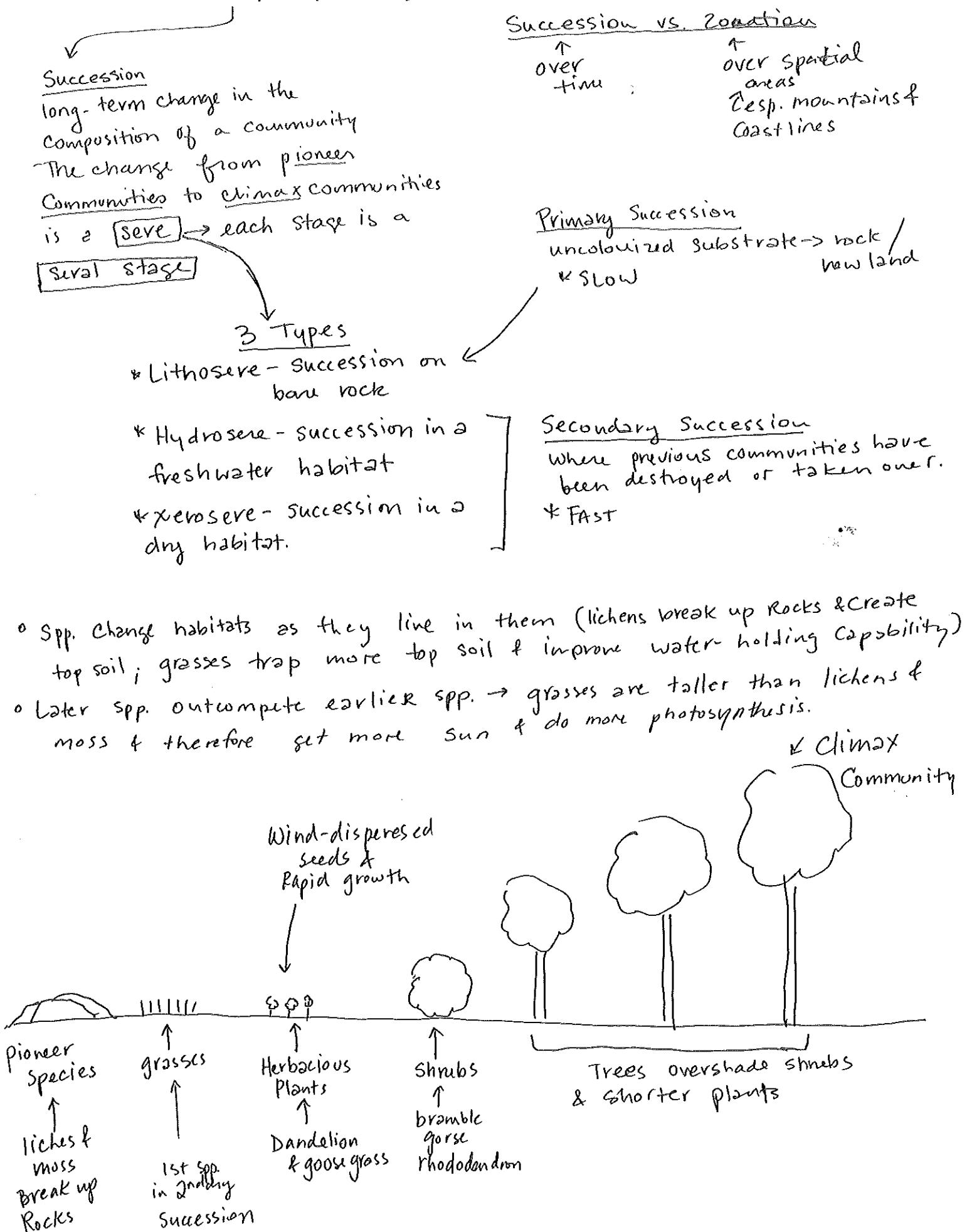


## Succession Notes

### 2.6.5 Describe the concept and processes of succession in a named habitat



4.1.5 Explain the relationship among ecosystem stability, diversity, succession and habitat.

2.6.6 Explain the changes in energy flow, gross and net productivity, diversity and mineral cycling in different stages of succession.

\* Each stage improves the conditions for the following stages.

\* Production : Respiration Ratio (P/R)

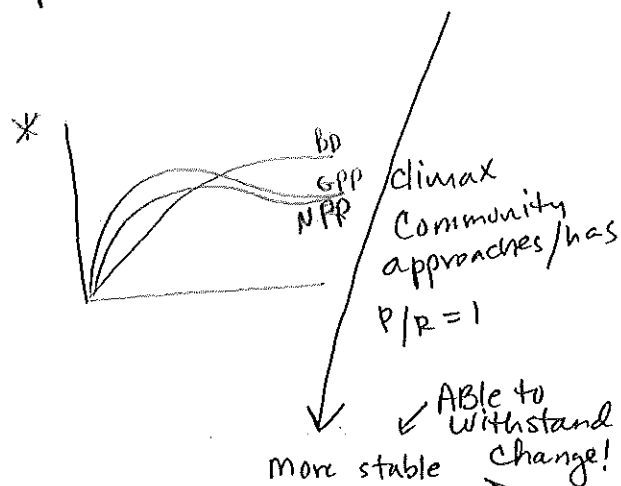
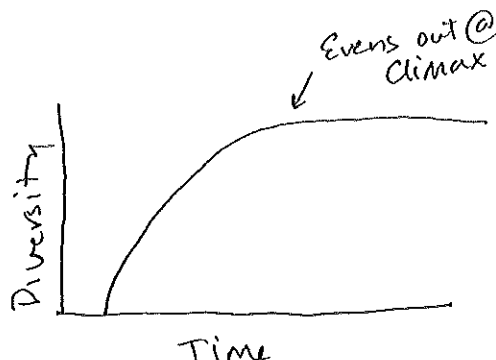
• Production = Rate of Respiration  $P/R = 1$  ←

•  $P/R > 1$  then Biomass accumulates

•  $P/R < 1$  then Biomass is depleted

Steady-state  
Equilibrium  
Results

\* Diversity



less stable

complex ecosys & nutrient cycles →

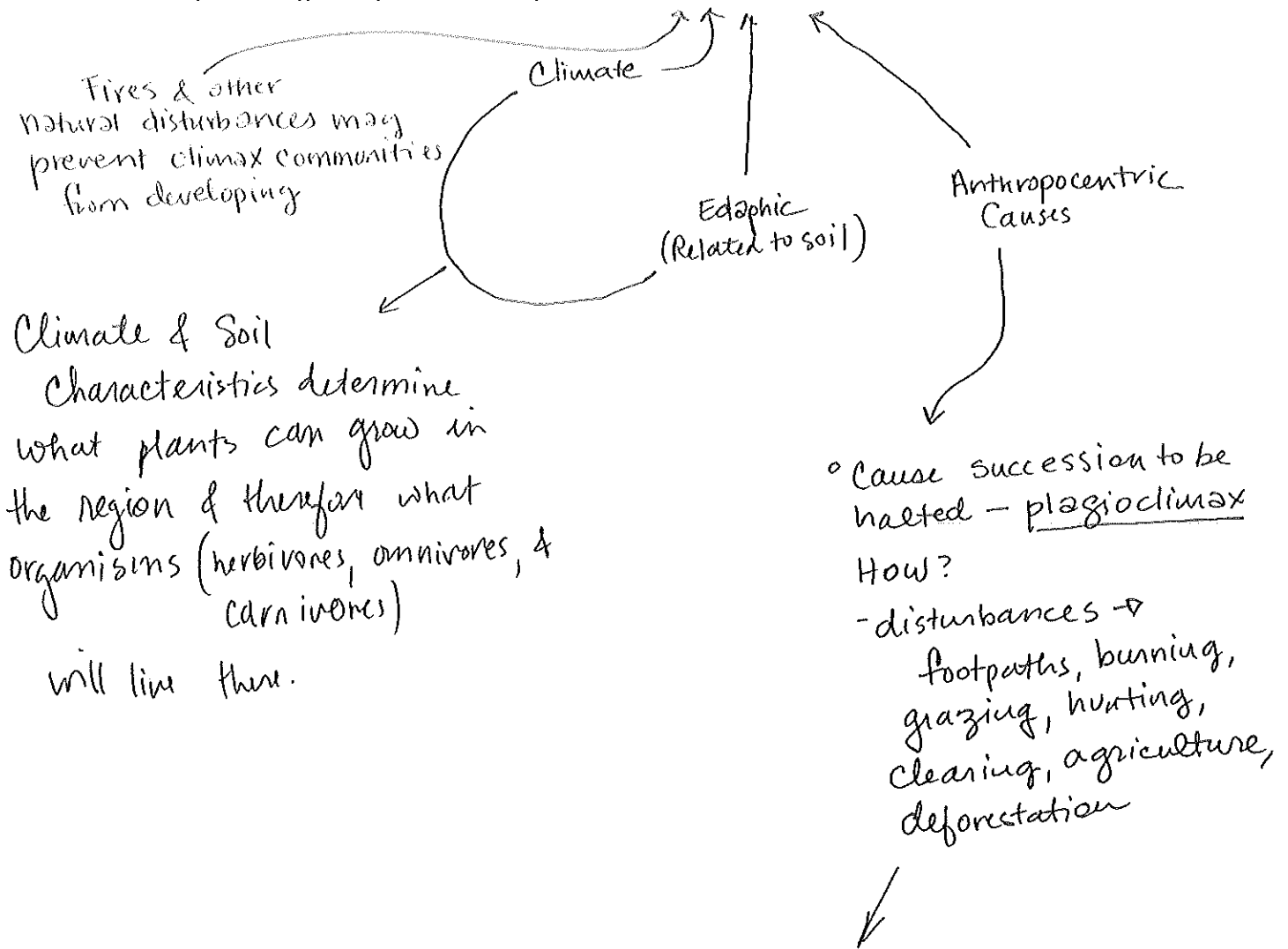
| Pioneer Community                                  | Intermediate Community                          | Climax Community                          |
|--|---|---|
| Small organisms                                    | medium organisms                                | Large organisms                           |
| Simple food chains & food webs                     | > complex food chains & food webs               | > complex food webs & food chains         |
| No → little top soil                               | some top soil                                   | Lots of top soil                          |
| Very little $H_2O$ Holding Capability              | > water holding                                 | > water holding                           |
| very little minerals & nutrients                   | > minerals & nutrients                          | > minerals & nutrients                    |
| very little nutrient cycling                       | > nutrient cycling                              | > nutrient cycling                        |
| Few niches so low Biodiversity                     | Diverse niches & Habitat so High BD             | stable habitats so fewer niches & ↓ in BD |
| Few Producers so ↓ GPP<br>Low Respiration<br>↑ NPP | > Producers, so ↑ GPP<br>> Respiration<br>↑ NPP | ↑ GPP<br>↑ Respiration<br>↓ NPP           |

stabilizes!

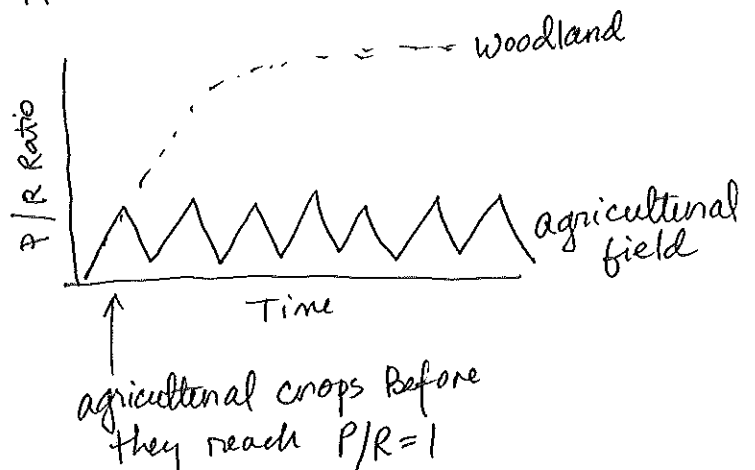
Climax {

- ↑ K strategists
- ↑ Habitat div.
- Steady state eq.
- greater biomass
- ↑ spp. diversity
- lower pH
- Taller & longer-lived plants

## 2.6.7 Describe factors affecting the nature of climax communities



Agricultural Fields vs. Natural Woodland



## 2.5.6 Define the terms of both gross primary productivity (GPP) and net primary productivity (NPP).

Biomass or Energy gained through photosynthesis in Primary producers

gain by producers in Energy or Biomass per unit area per unit time AFTER energy & Biomass is used for Respiration (R)

\* Gross Secondary Productivity → Biomass or Energy gained by absorption in consumers

$$* NPP = GPP - R$$